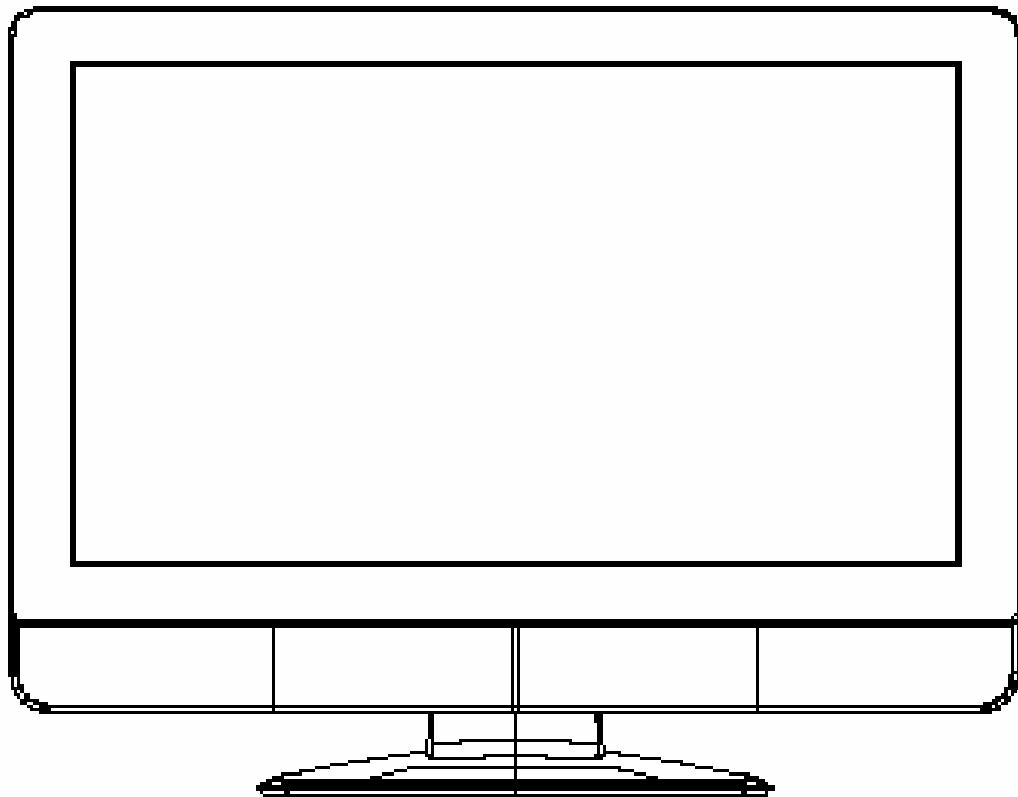


Service Manual



**Model #: VIZIO VX32L/VW32L
HDTV20A**

(AUO/LPL/Samsung Panel)

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Top Confidential

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Appendix

1. Main Board Circuit Diagram
2. Main Board PCB Layout
3. Assembly Explosion Drawing

Block Diagram

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FCC INFORMATION

This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause unacceptable interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures -- reorient or relocate the receiving antenna; increase the separation between equipment and receiver; or connect the into an outlet on a circuit different from that to which the receiver is connected.

FCC WARNING

To assure continued FCC compliance, the user must use a grounded power supply cord and the provided shielded video interface cable with bonded ferrite cores. Also, any unauthorized changes or modifications to Amtrak products will void the user's authority to operate this device. Thus VINC Will not be held responsible for the product and its safety.

CE CERTIFICATION

This device complies with the requirements of the EEC directive 89/336/EEC with regard to "Electromagnetic compatibility."

SAFETY CAUTION

Use a power cable that is properly grounded. Always use the AC cords as follows – USA (UL); Canada (CSA); Germany (VDE); Switzerland (SEV); Britain (BASEC/BS); Japan (Electric Appliance Control Act); or an AC cord that meets the local safety standards.

Chapter 1 Features

1. Built in TV channel selector for TV viewing.
2. Simulatnueous display of PC and TV images.
3. Connectable to PC's analog RGB port.
4. Built in S-video, HDTV, composite video, HDMI and TV out.
5. Built in auto adjust function for automatic adjument of screen display.
6. Smoothing function enables display of smooth texts and graphics even if image withresolution lower than 1366x768 is magnified.
7. Advanced video functions for personal favor.
8. Power saving to reduce consumption power too less than 3W.
9. On Screen Display: user can define display mode (i.e. color, brightness, contrast, sharpness, backlight), sound setting, TV channel program, aspect and gamma or reset all setting.

Chapter 2 Specification

1. TFT-LCD CHARACTERISTICS

LPL LC320WX3-SLC1

Item	Specification
Display Pixels	1,366 (H) x 768 (V) pixels
Pixel Pitch	170.25 um(H) x 510.75 um(V) x RGB
Color Depth	8 bits 16.7 million colors
Active Display Area	697.685 mm(H)X392.256 mm(V)
Brightness (panel spec)	400cd/m ² (typ)
Contrast ratio (panel spec)	900:1
Color coordinates (typical)	
White	x=0.279±0.03, y=0.292±0.03
Red	x=0.628±0.03, y=0.343±0.03
Green	x=0.290±0.03, y=0.612±0.03
Blue	x=0.146±0.03, y=0.062±0.03

AUO T315XW02 VC

Item	Specification
Display Pixels	1,366 (H) x 768 (V) pixels
Pixel Pitch	0.51075 mm
Color Depth	8 bits 16.7 million colors
Active Display Area	697.685 (H) x 392.256(V)
Brightness (panel spec)	500 cd/m ² (typ)
Contrast ratio (panel spec)	1500:1
Color coordinates (typical)	

White	x=0.28±0.03, y=0.29±0.03
Red	x=0.64±0.03, y=0.33±0.03
Green	x=0.29±0.03, y=0.60±0.03
Blue	x=0.15±0.03, y=0.06±0.03

Samsung LTA320WT-L05

Item	Specification
Display Pixels	1,366 (H) x 768 (V) pixels
Pixel Pitch	0.51075(H)X0.17025(W)*3
Color Depth	8 bits 16.7 million colors
Active Display Area	697.6845(H)X392.256(V)
Brightness (panel spec)	450cd/m ² (typ)
Contrast ratio (panel spec)	1500:1
Color coordinates (typical)	
White	x=0.28±0.03, y=0.29±0.03
Red	x=0.642±0.03, y=0.33±0.03
Green	x=0.283±0.03, y=0.602±0.03
Blue	x=0.145±0.03, y=0.062±0.03

2. TFT-LCD OPTICAL CHARACTERISTICS

Contrast ratio: 1.CR : 900(Typ) 2. CR WITH AI : 2000(Typ)

Surface Luminance, White: 400 cd/m² (Typ)

Luminance Variation, δ =1.3 (Max)

Response Time = 8 ms (Max=12ms)

Viewing Angle (CR>10)

Left: 89°typ.

Right: 89°typ.

Top: 89°typ.

Bottom: 89°typ.

3. Input Connectors

1 x RF Connector for internal ATSC/QAM/NTSC Hybrid Tune

2x HDMI with HDCP plus Stereo Audio (RCA)

2x Component YPbPr plus Stereo Audio

1x RGB PC(WXGA) plus Stereo Audio

1x Composite Video plus stereo Audio

1x S-VIDEO Connect

4. POWER SUPPLY

Input Voltage Level: 100~240 Vac, 50/ 60 Hz

Power Consumption: 180W MAXPower OFF: to less than 3W MAX

5. Speaker

Output 10W (max) X2

6. ENVIRONMENT

Operating Temperature: 5c~35c (Ambient)

Operating Humidity: Ta= 35 °C, 90%RH (Non-condensing)

Operating Altitude: 0 - 14,000 feet (4267.2m)(Non-Operating)

7. DIMENSIONS (Physical dimension)

Width: 760.0mm. +/- 20 mm

Depth: 51.6 mm +/- 20 mm

Height: 450.0 mm +/- 20 mm

8. WEIGHT (Physical weight)

a. Net: 19.12

b. Gross: 23.81

Precaution

Please pay attention to the followings when you use this TFT LCD module.

1. OPERATING PRECAUTIONS

- (1) The spike noise causes the mis-operation of circuits. It should be lower than following voltage :
 $V=\pm 200\text{mV}$ (Over and under shoot voltage)
- (2) Response time depends on the temperature. (In lower temperature, it becomes longer.)
- (3) Brightness depends on the temperature. (In lower temperature, it becomes lower.) And in lower temperature, response time (required time that brightness is stable after turned on) becomes longer.
- (4) Be careful for condensation at sudden temperature change. Condensation makes damage to polarizer or electrical contacted parts. And after fading condensation, smear or spot will occur.
- (5) When fixed patterns are displayed for a long time, remnant image is likely to occur.
- (6) Module has high frequency circuits. System manufacturers shall do sufficient suppression to the electromagnetic interference. Grounding and shielding methods may be important to minimize the interference.

2. HANDLING PRECAUTIONS FOR PROTECTION

- (1) The protection film is attached to the bezel with a small masking tape. When the protection film is peeled off, static electricity is generated between the film and polarizer. This should be peeled off slowly and carefully by people who are electrically grounded and with well ion-blown equipment or in such a condition, etc.
- (2) When the module with protection film attached is stored for a long time, sometimes there remains a very small amount of glue still on the bezel after the protection film is peeled off.
- (3) You can remove the glue easily. When the glue remains on the bezel surface or its vestige is recognized, please wipe them off with absorbent cotton waste or other soft material like chamois soaked with normal-hexane.

Chapter 3 On Screen Display

On Screen Display (OSD) is a friendly interface providing the function adjusting in our system. Customers could operate it only by few buttons. There is the introduction of the OSD.

Main unit button

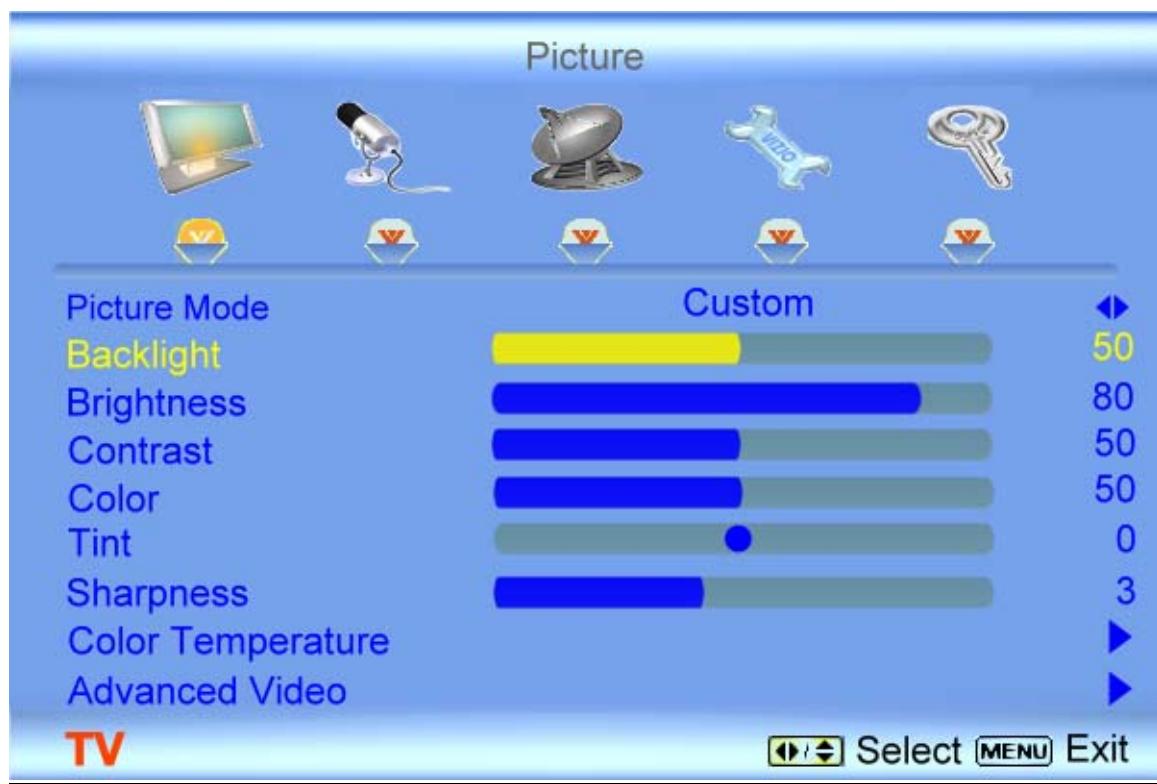
MENU	OK
CH ▲	↑
CH ▼	↓
VOL +	←
VOL -	→
Input	

[MENU]

“MENU” button could start the OSD which could adjust the performance and set up the setting between the different input sources. There are the structures.

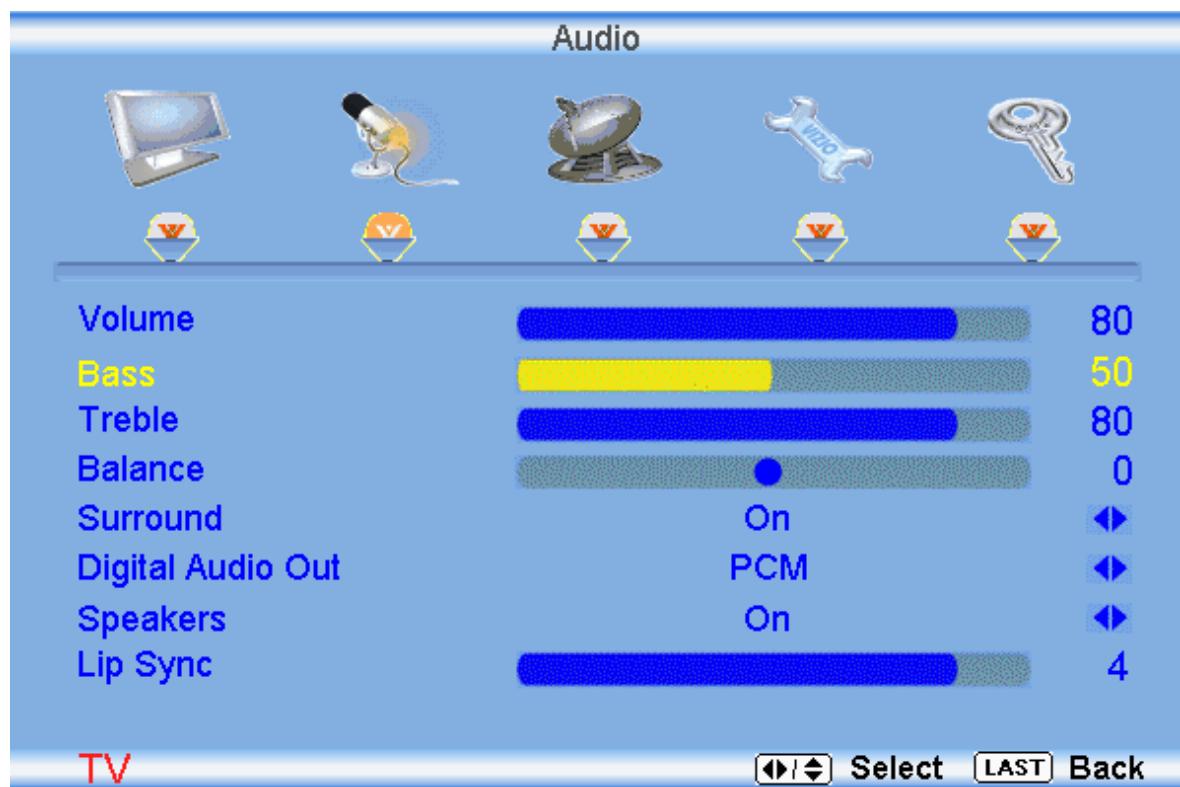
TV Source

- A. Picture : (Bold: Default)
 - a. Picture Mode (Standard / Movie / Game / Custom)
 - b. Backlight (0~100, 90)
 - c. Brightness (0~100, 50)
 - d. Contrast (0~100, 50)
 - e. Color (saturation)(0~100, 50)
 - f. Tint (hue) (-32~32, 0)
 - g. Sharpness (0~7, 4)
 - h. Color Temperature (Cool/Normal/Warm/Custom)
 - i. Advanced Video
 - 1. DNR (Low/Medium/Strong/Off)
 - 2. Black level extender (Off/On)
 - 3. White Peak Limiter (On/Off)
 - 4. CTI (Low/Medium/Strong/Off)
 - 5. Flesh Tone (Off/On)
 - 6. Adaptive Luma (Off/On)



B. Audio : (Bold: Default)

- a. Volume (0~100, 25)
- b. Bass (0~100, 50)
- c. Treble (0~100, 50)
- d. Balance (-50~50, 0)
- e. Surround (ON/OFF)
- f. Digital Audio Out (PCM/OFF/Dolby Digital)
- g. Speaker (ON/OFF)
- h. Lip Sync (0~5 , 0)



C. TV : (Bold: Default)

- a. Tuner Mode (Cable/Antenna)
- b. Auto Search
- c. Skip Channel
- d. MTS (Stereo/SAP/Mono)
- e. Time Zone (Eastern/Indiana/Central/Mountain/Arizona/Pacific/Alaska/Hawaii)
- f. Daylight Saving (ON/OFF)



D. Setup : (Bold: Default)

- a. Language (English/ Français / Español)
- b. Minuterie de veille (OFF/30Min/60Min/90Min/120Min)
- c. Wide (Wide/Panoramic/Normal)
- d. Input Naming (AV1/AV2/COMP1/COMP2/RGB/HDMI1/HDMI2)
- e. CC (OFF/CC1~4)
- f. CC On Mute (OFF/ON)
- g. Style de Sous-titre
- h. H/V Position
- i. Valeurs par default



E. Parental : (Bold: Default)



Password (Default => 0000)

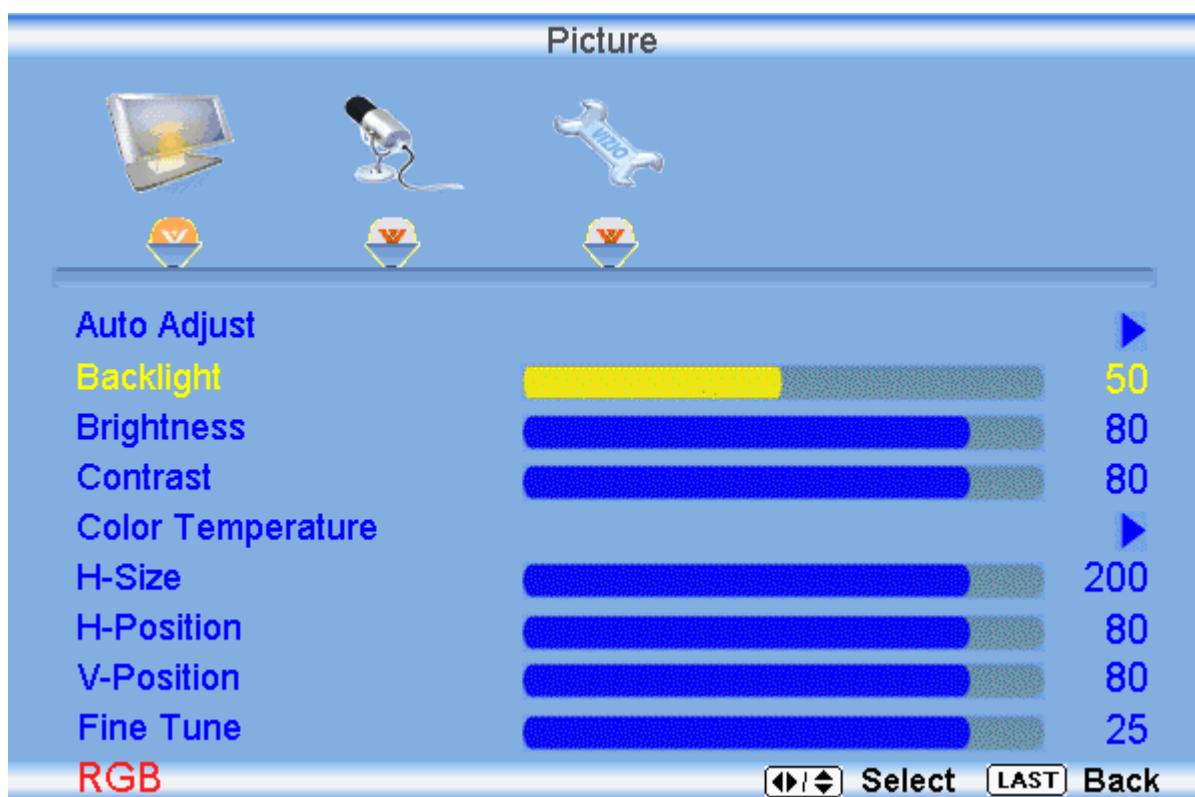
- a. Cannel Block
- b. TV Rating
- c. Move Rating
- d. Check for New DTV Rating
- e. Block TV Unrated TV (NO/Yes)
- e. Access Code Edit



RGB Mode

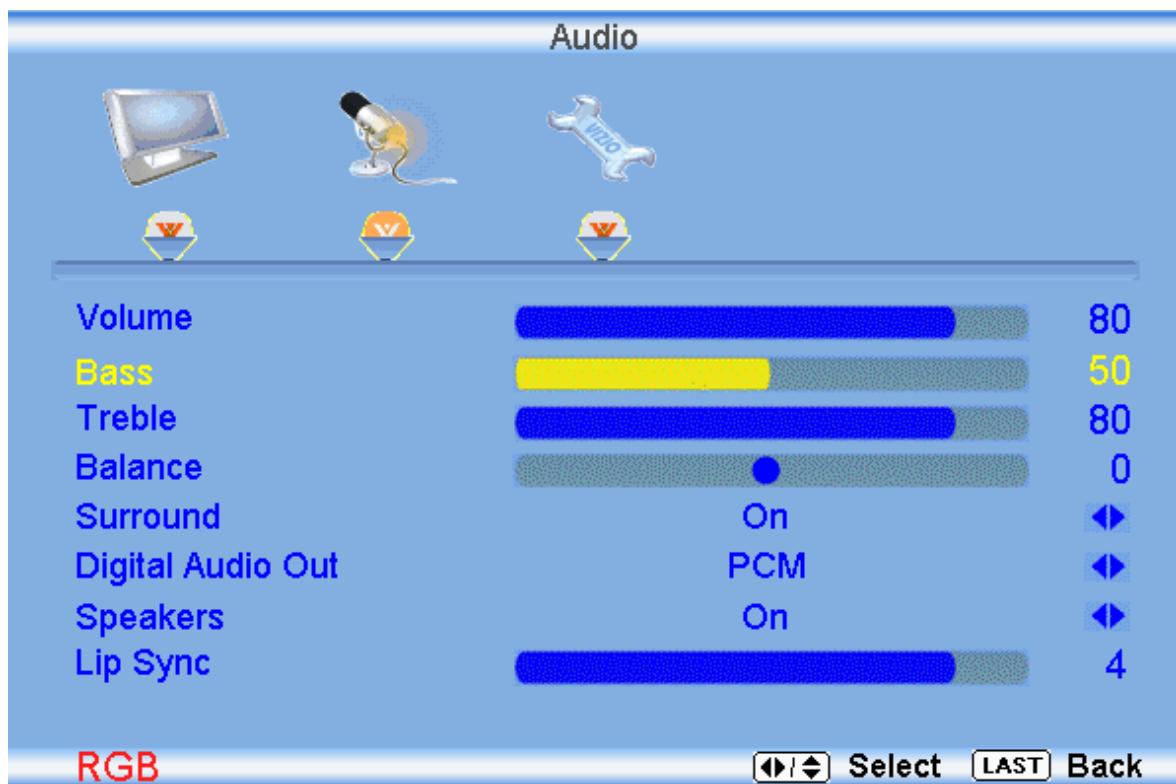
A. Picture Adjust : (Bold: Default)

- a. Auto Adjust
- b. Backlight (0~100, 90)
- c. Brightness (0~100, 50)
- d. Contrast (0~100, 50)
- e. Color Temperature (9300/Custom/6500)
- f. H-Size (0~255, 127)
- g. H-Position (0~100, 48)
- h. V-Position (0~100, 47)
- i. Fine Tune (0~31, 29)



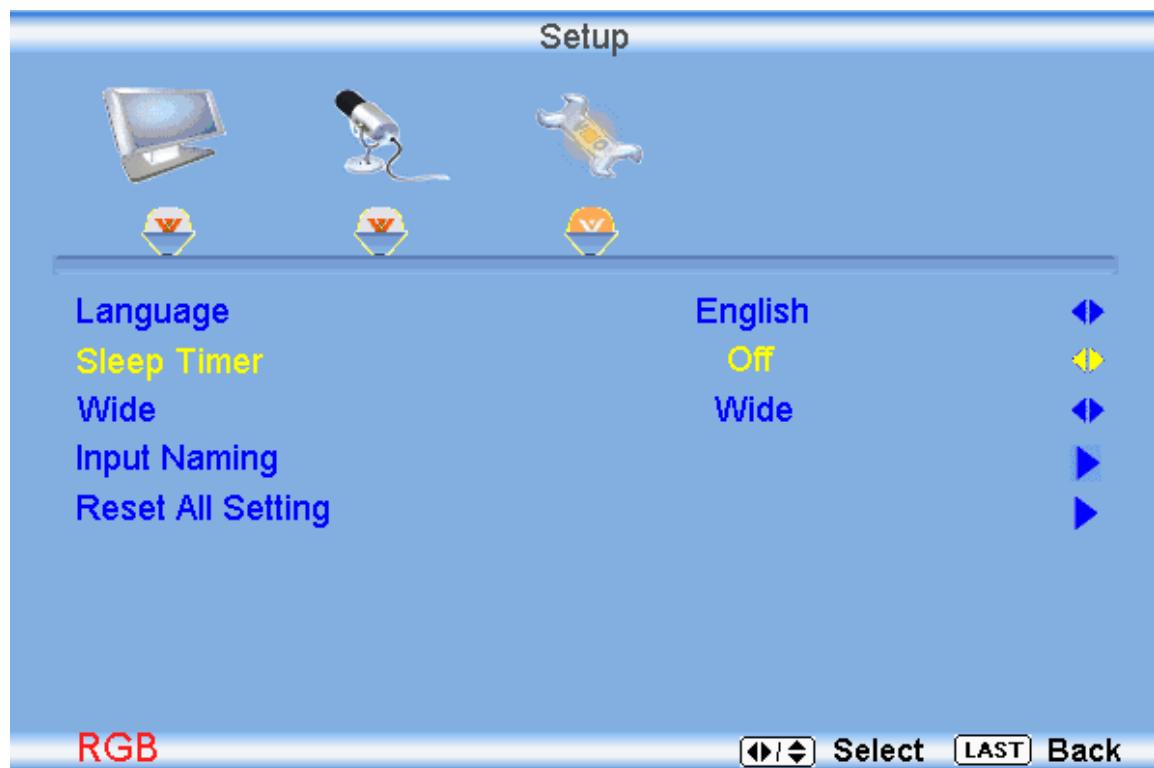
B. Audio : (Bold: Default)

- a. Volume (0~100, 25)
- b. Bass (0~100, 50)
- c. Treble (0~100, 50)
- d. Balance (-50~50, 0)
- e. Surround (ON/OFF)
- f. Digital Audio Out(PCM/OFF/Dolby Digital)
- g. Speakers (ON/OFF)
- h. Lip Sync (0~5 , 0)



C. Setup : (Bold: Default)

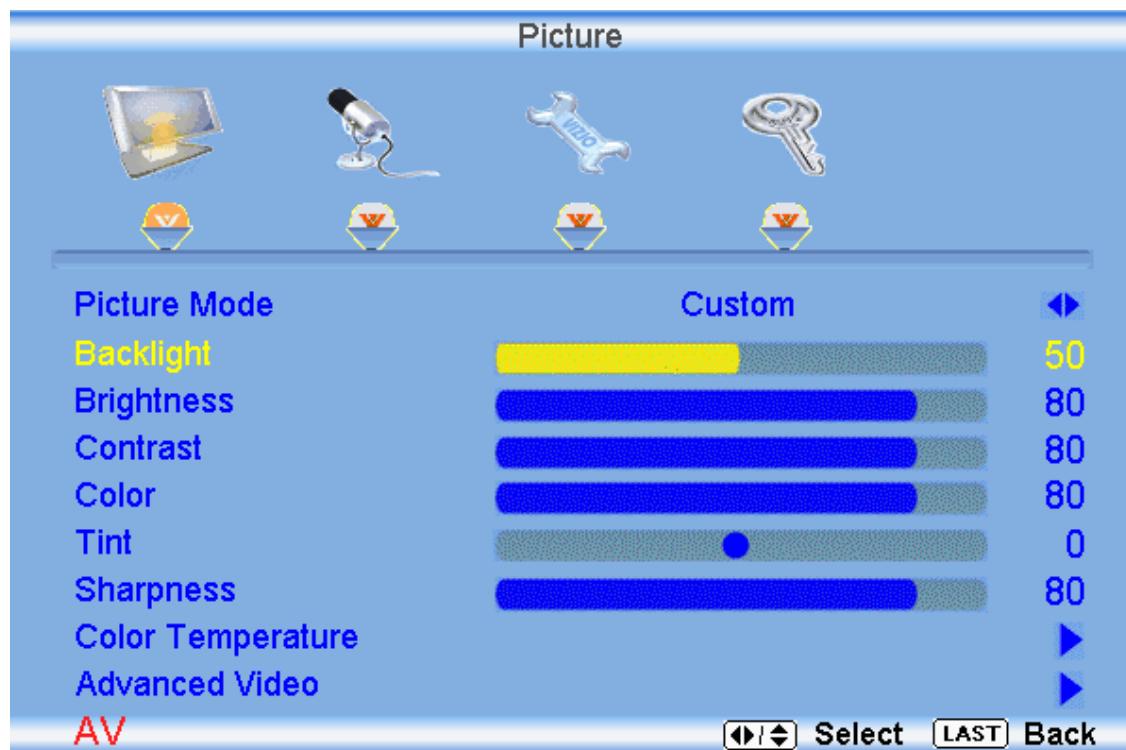
- a. Language (English/ Français / Español)
- b. Sleep Timer (OFF/30Min/60Min/90Min/120Min)
- c. Wide (Wide/Normal)
- d. Input naming (AV1/AV2/COMP1/COMP2/HDMI1/HDMI2)
- e. Rest All Setting (OK/Cancel)



AV / COMPONENT MODE

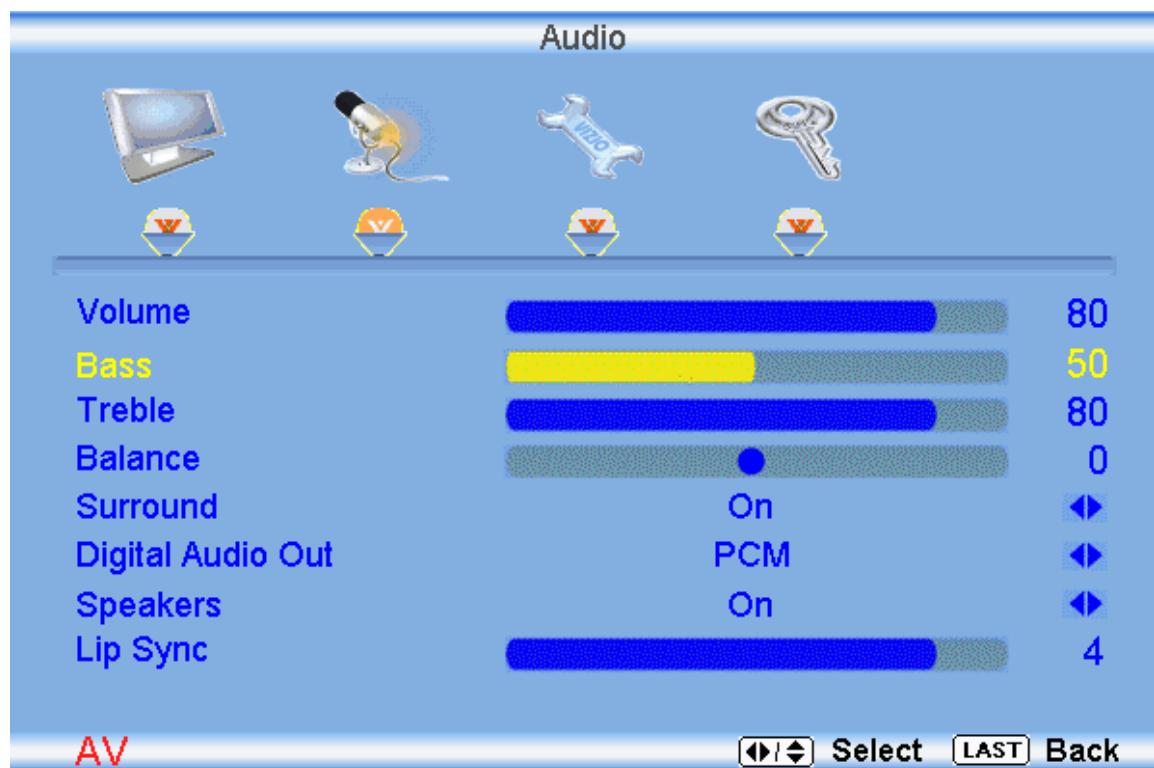
A. Picture : (Bold: Default)

- a. Picture Mode (Custom/Standard/Movie /Game / Custom)
- b. Backlight (0~100, 90)
- c. Brightness (0~100, 50)
- d. Contrast (0~100, 50)
- e. Color (saturation)(0~100, 50)
- f. Tint (hue) (-32~32, 0)
- g. Sharpness (0~7, 4)
- h. Color Temperature (Cool/Normal/Warm/Custom)
- i. Advanced Video
- 1. DNC (Low/Medium/Strong/Off)
- 2. Black level extender (Off/On)
- 3. White Peak Limiter (On/Off)
- 4. CTI (Low/Medium/Strong/Off)
- 5. Flesh Tone (Off/On)
- 6. Adaptive Luma (Off/On)



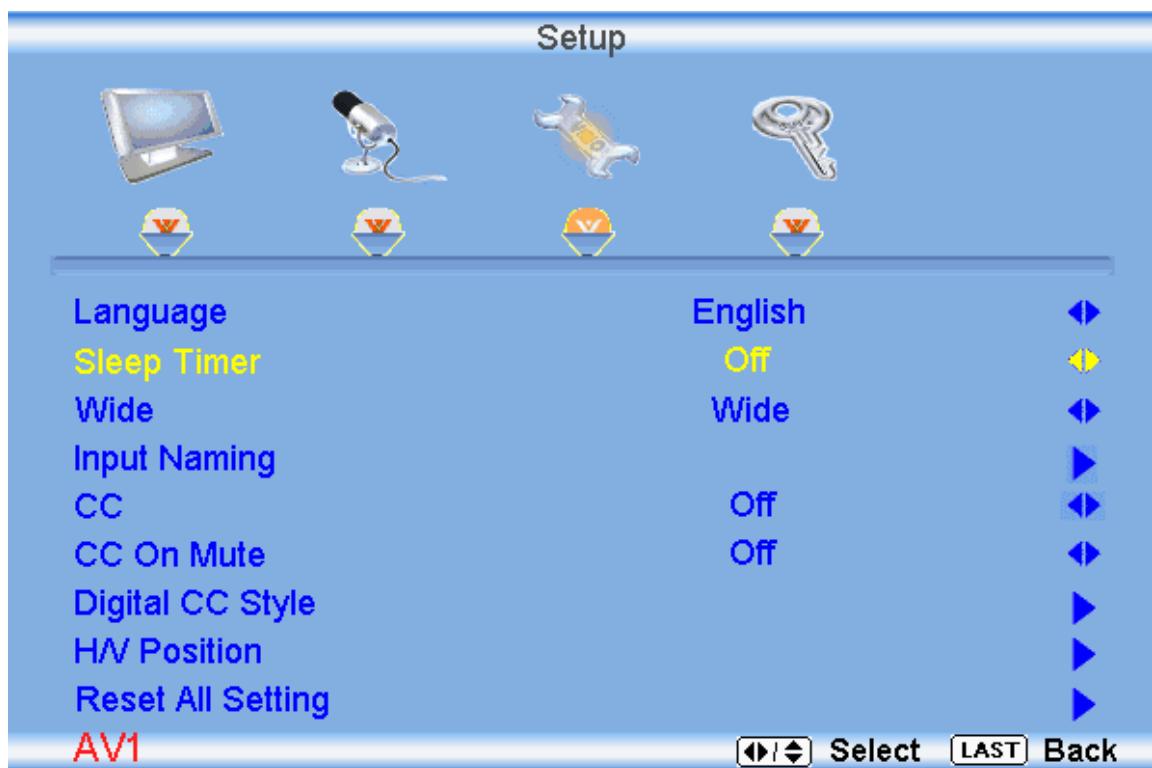
B. Audio : (Bold: Default)

- a. Volume (0~100, 25)
- b. Bass (0~100, 50)
- c. Treble (0~100, 50)
- d. Balance (-50~50, 0)
- e. Surround (ON/OFF)
- f. Digital Audio Out (PCM/OFF/Dolby Digital)
- g. Speakers (ON/OFF)
- h. Lip Sync (0~5)



C. Setup : (Bold: Default)

- a. Language (English/ Français / Español)
- b. Sleep Timer (OFF/30Min/60Min/90Min/120Min)
- c. Wide (Wide/Normal)
- d. Input Naming (AV1/AV2/COMP1/COMP2/HDMI1/HDMI2)
- e. CC(OFF/CC1-4)
- f. CC On Mute (OFF/ON)
- g. H/V Position
- h. Reset All Setting (OK/Cancel)



D. Parental : (Bold: Default)

 Password (Default => 0000)

 a. Cannel Block

 b. TV Rating

 c. Movie Rating

 d. Block Unrated TV (NO/Yes)

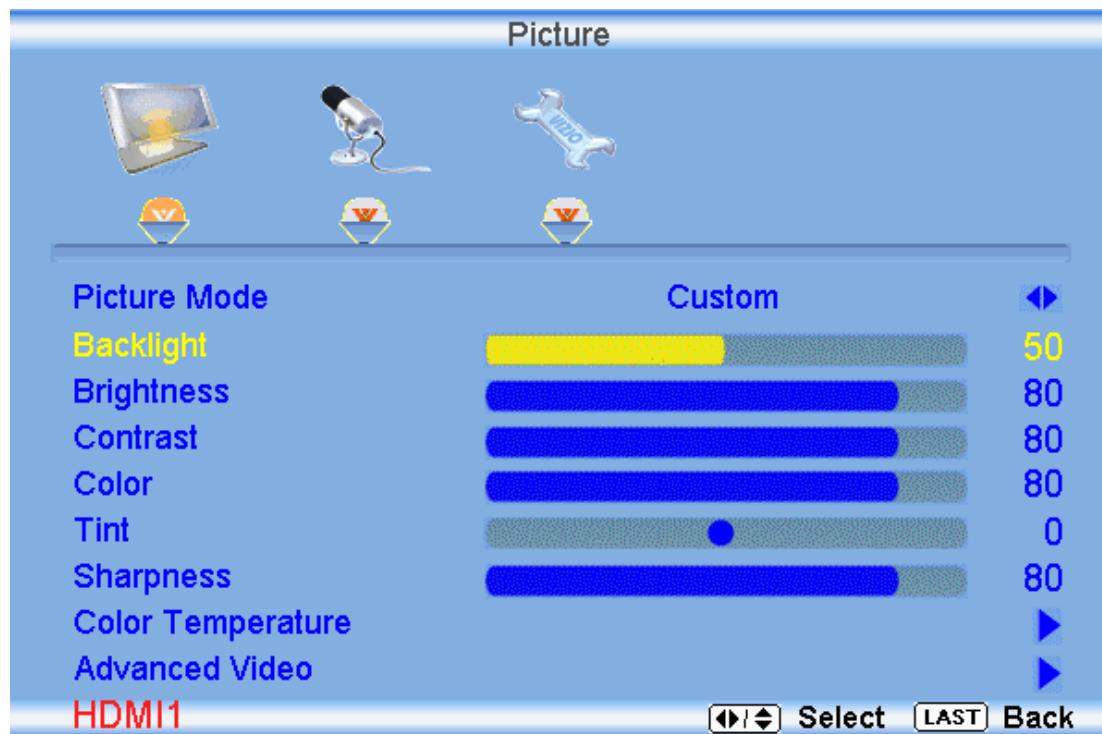
 e. Access Code Edit



HDMI MODE

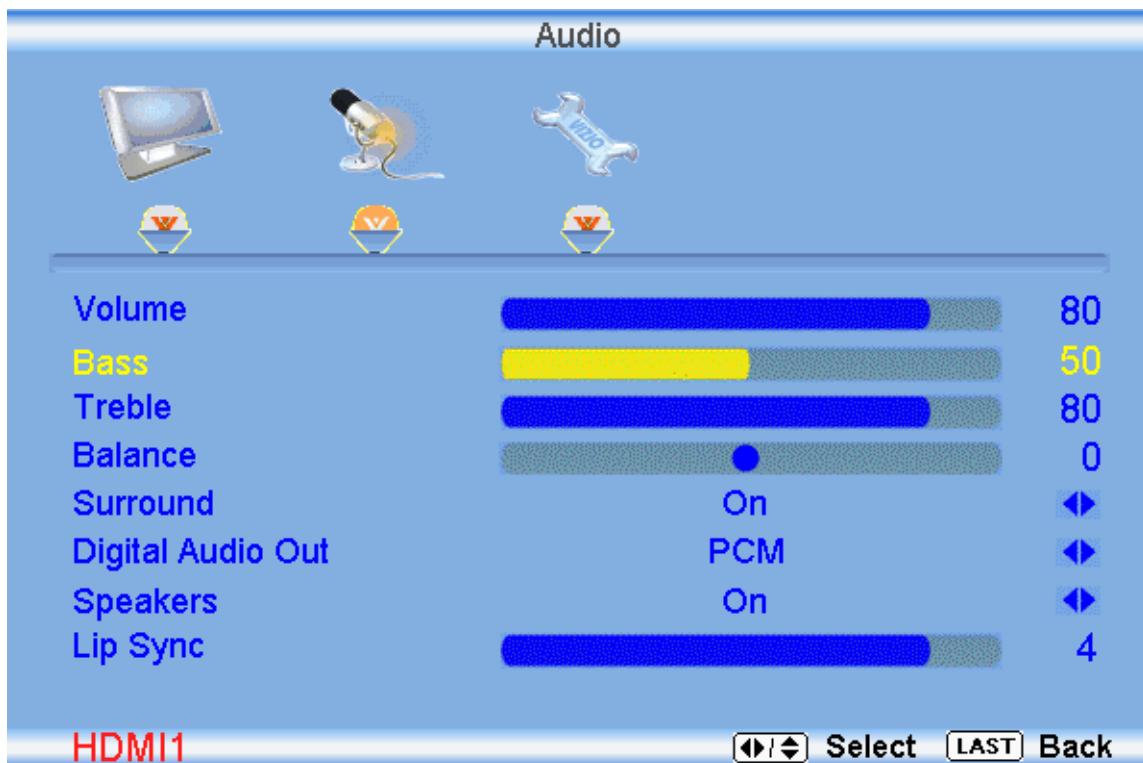
A. Picture : (Bold: Default)

- a. Picture Mode (Custom/Movie/Game/Standard Custom)
- b. Backlight (0~100, 90)
- c. Brightness (0~100, 50)
- d. Contrast (0~100, 50)
- e. Color (saturation)(0~100, 50)
- f. Tint (hue) (-32~32, 0)
- g. Sharpness (0~7, 4)
- h. Color Temperature (Cool/Normal/Warm/Custom)
- i. Advanced Video
 - 1. DNC (Low/Medium/Strong/Off)
 - 2. Black level extender (Off/On)
 - 3. White Peak Limiter (On/Off)
 - 4. CTI (Low/Medium/Strong/Off)
 - 5. Flesh Tone (Off/On)
 - 6. Adaptive Luma (Off/On)



B. Audio : (Bold: Default)

- a. Volume (0~100, 25)
- b. Bass (0~100, 50)
- c. Treble (0~100, 50)
- d. Balance (-50~50, 0)
- e. Surround (ON/OFF)
- f. Digital Audio Out
- g. Speakers (ON/OFF)
- h. Lin Sync (0~5 , 0)



C. Setup : (Bold: Default)

- a. Language (English/ Français / Español)
- b. Sleep Timer (OFF/30Min/60Min/90Min/120Min)
- g. Rest All Setting (OK/Cancel)



[INPUT]

“INPUT” could supply an interface providing a list. The list shows input sources and provides the choices of different sources. The list includes items as below:

MAIN	PIP
TV	TV
AV1	AV1
AV2	AV2
COMPONENT1	COMPONENT1
COMPONENT2	COMPONENT2
RGB	RGB
HDMI1	HDMI1
HDMI2	HDMI2

- A. TV: Analog TV or digital TV
- B. AV1, AV2: Composite (AV) signal
- C. Component1, Component2: Color difference (YPbPr) video signals.
- D. RGB: Video Graphics Array (VGA) or D-sub video signals.
- E. HDMI1, HDMI2: High Definition Multimedia Interface (HDMI) multimedia signals.

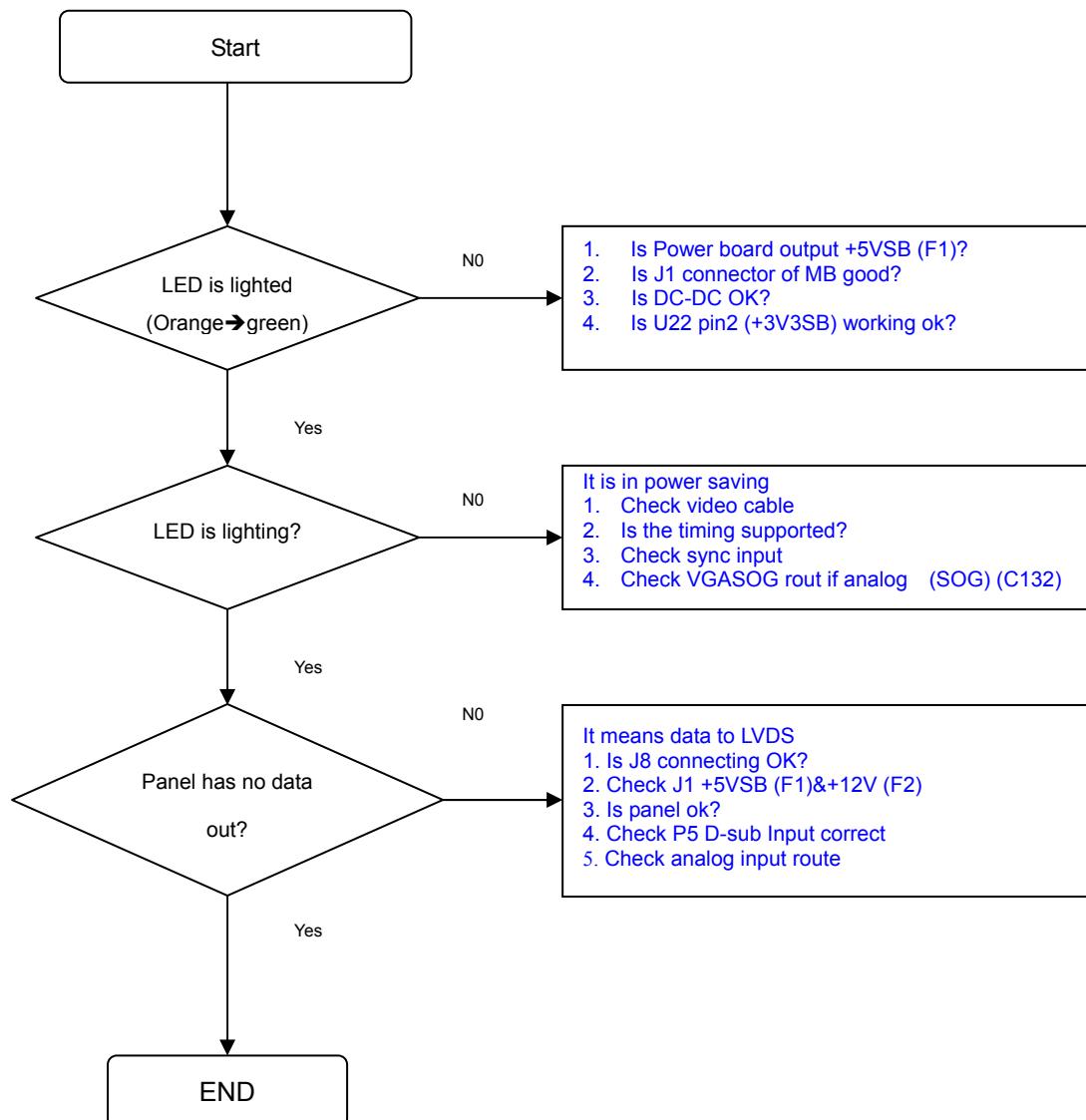
[INFO]

“INFO” button could show an information bar which displays the information about the input signal on our LCD TV.

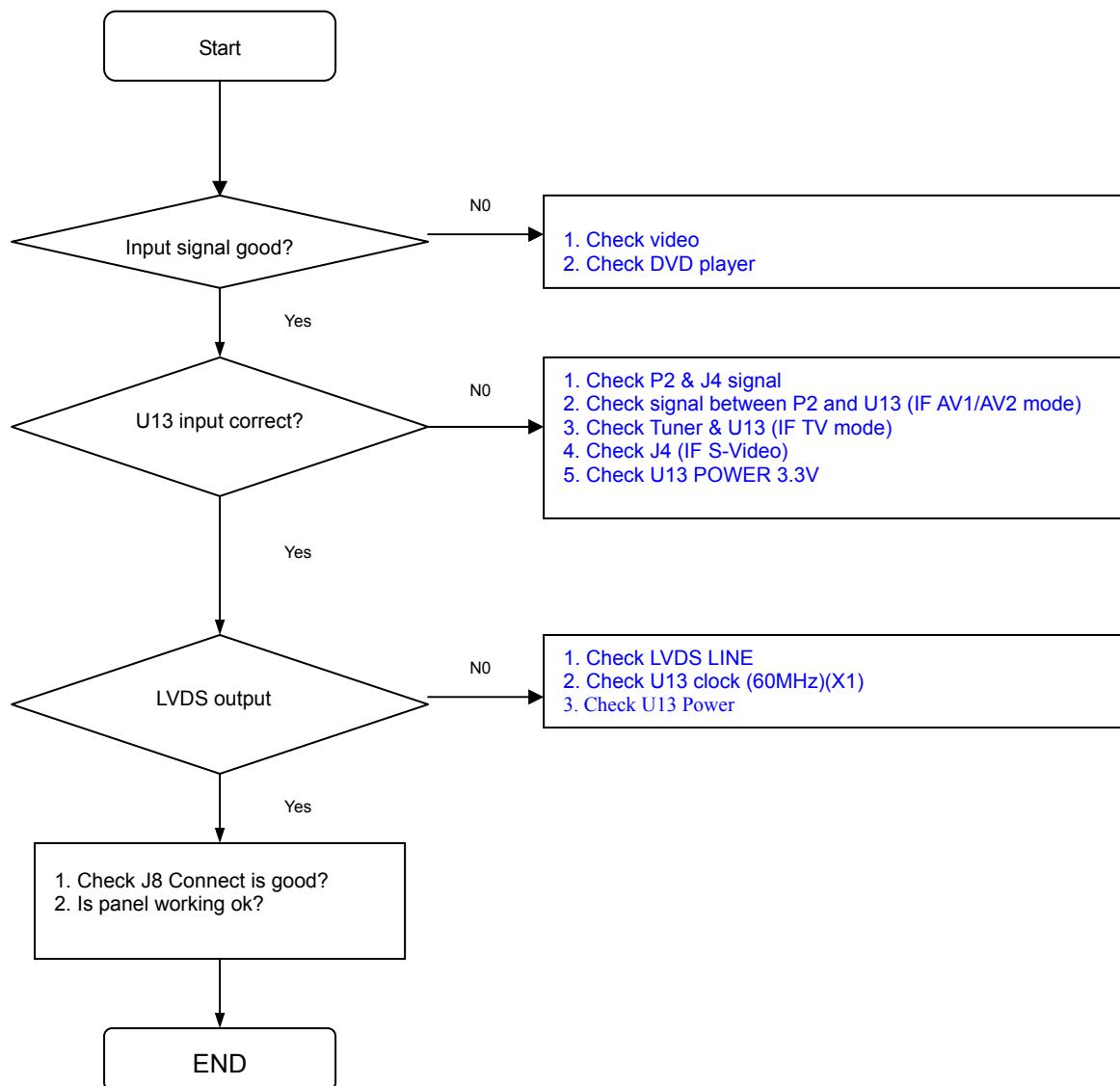


Chapter 9 Trouble shooting

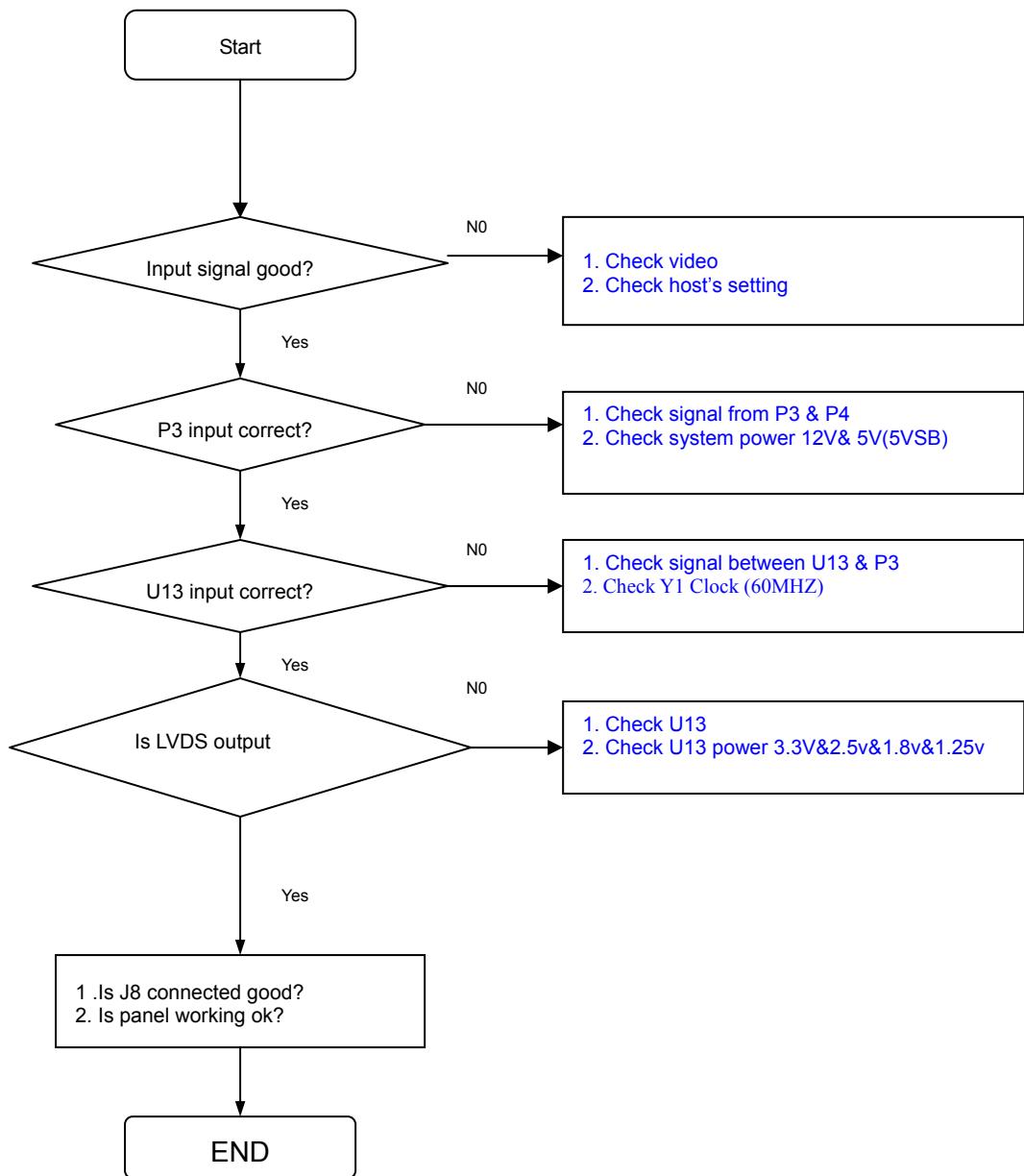
MONITOR DISPLAY NOTHING (PC MODE)



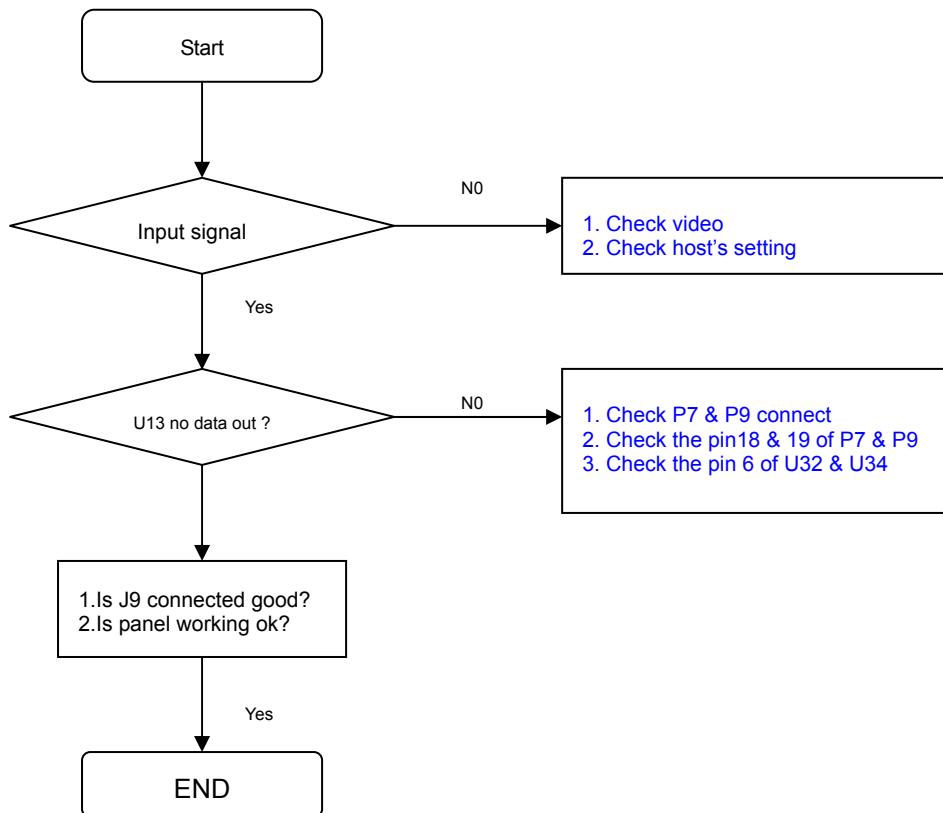
(TV, COMPOSITE VIDEO1, 2, S-VIDEO) IS NOT DISPLAY CORRECTLY



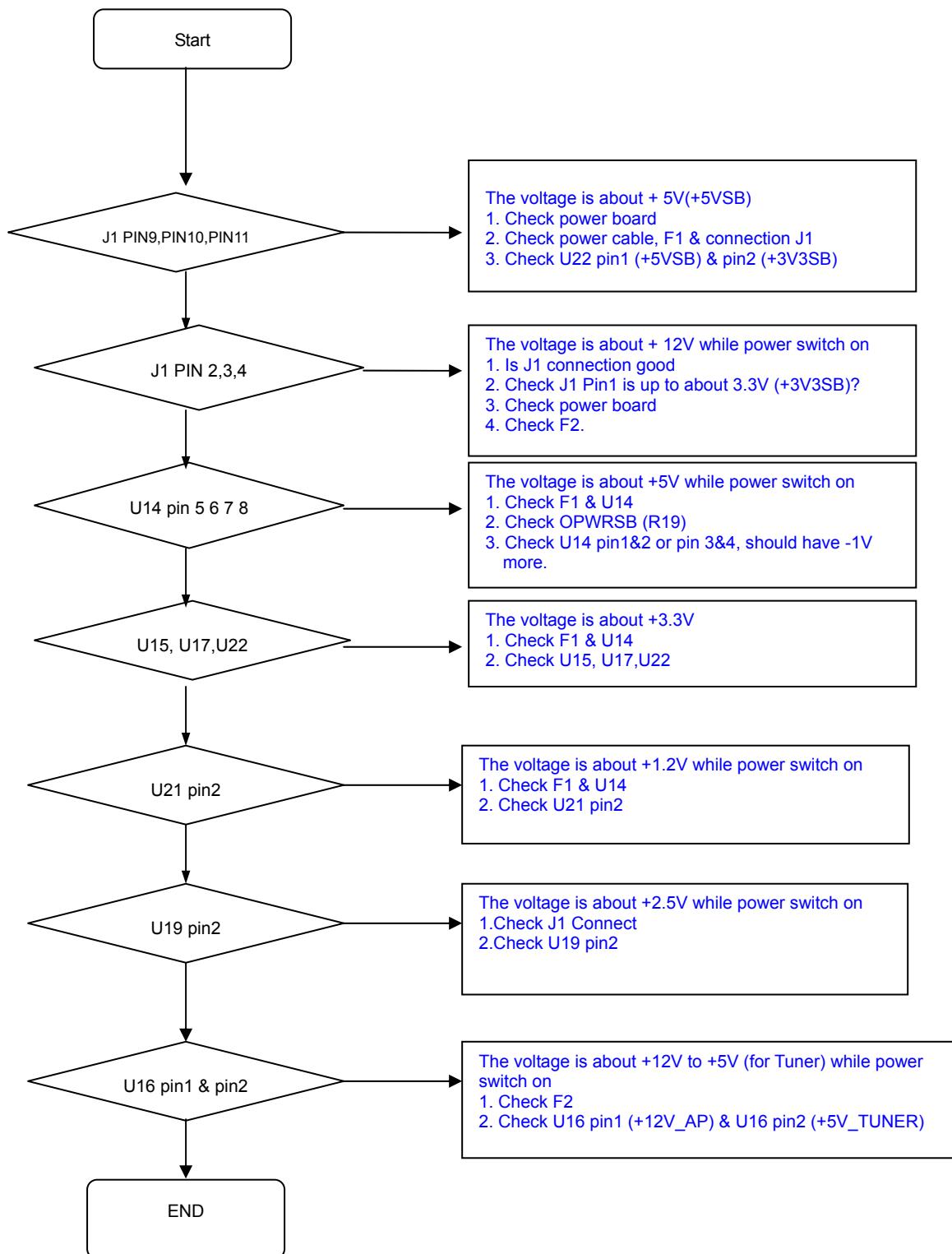
(COMPONENT1, 2) IS NOT DISPLAY CORRECTLY



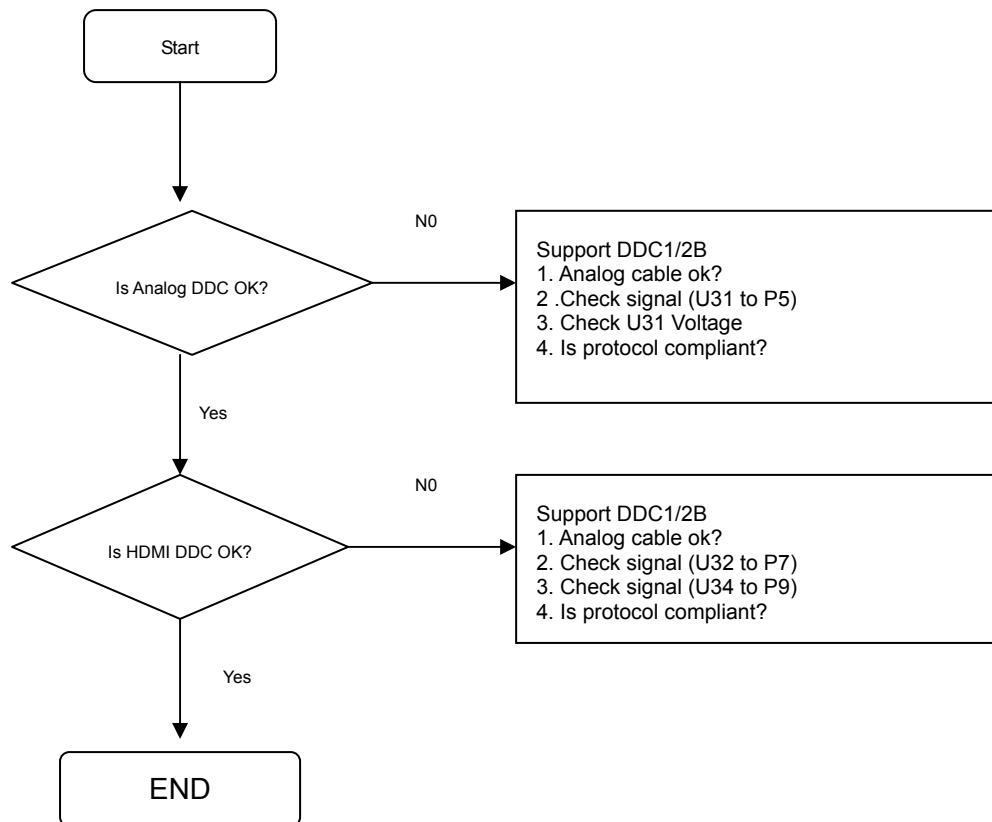
(HDMI) IS NOT DISPLAY CORRECTLY



TROUBLE OF DC-DC CONVERTER



TROUBLE OF EDID READING

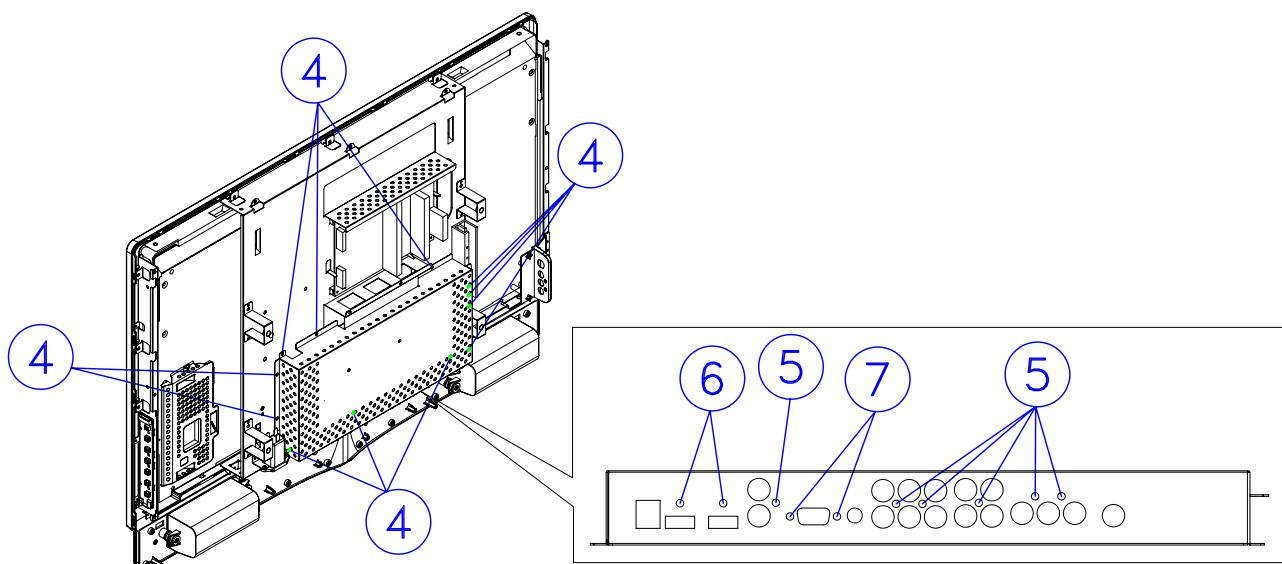
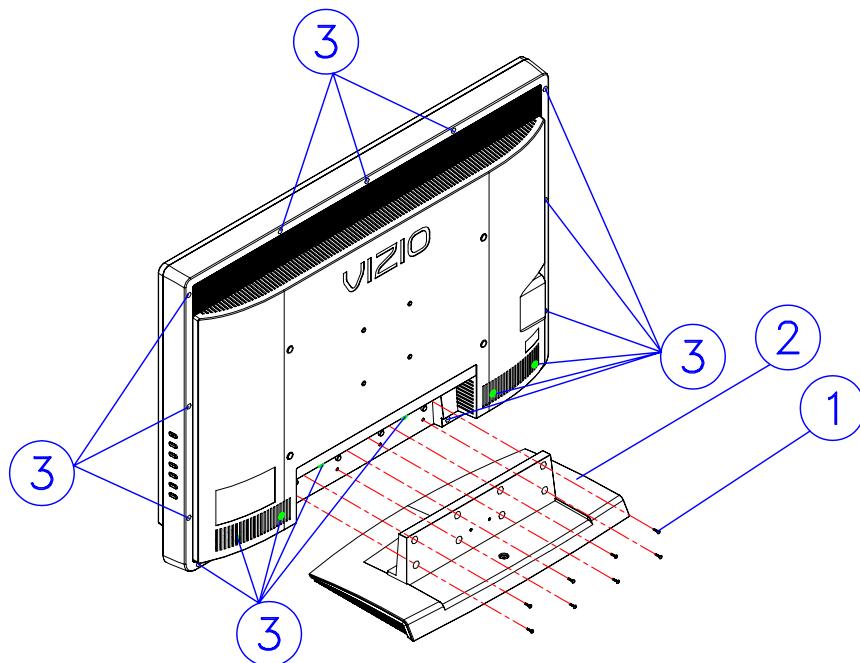


DISASSEMBLY INSTRUCTIONS

1. REAR COVER ASS'Y REMOVAL

Note: Spread a mat underneath to avoid damaging the TV surface.

- 1) Remove eight screws ① from Base Ass'y② .
- 2) Separate the Base Ass'y② .
- 3) Remove seventeen screws ③ from rear cover.
- 4) Separate the rear cover.
- 5) Remove twelve screws ④ from Main shielding.
- 6) Remove six screws ⑤, two screws ⑥, and two hexagon screws ⑦ from Main Shielding.
- 7) Separate the Main Shielding.

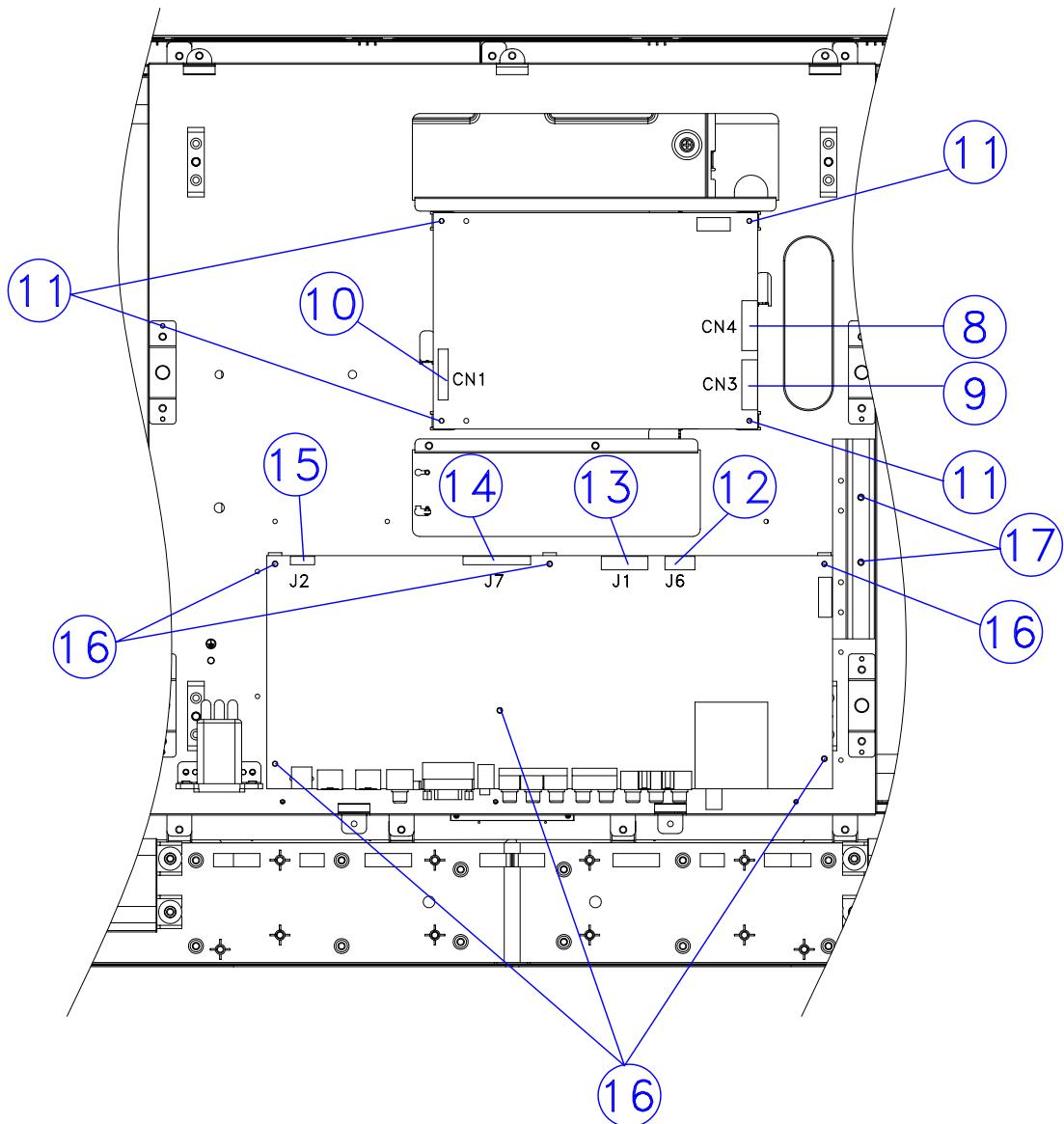


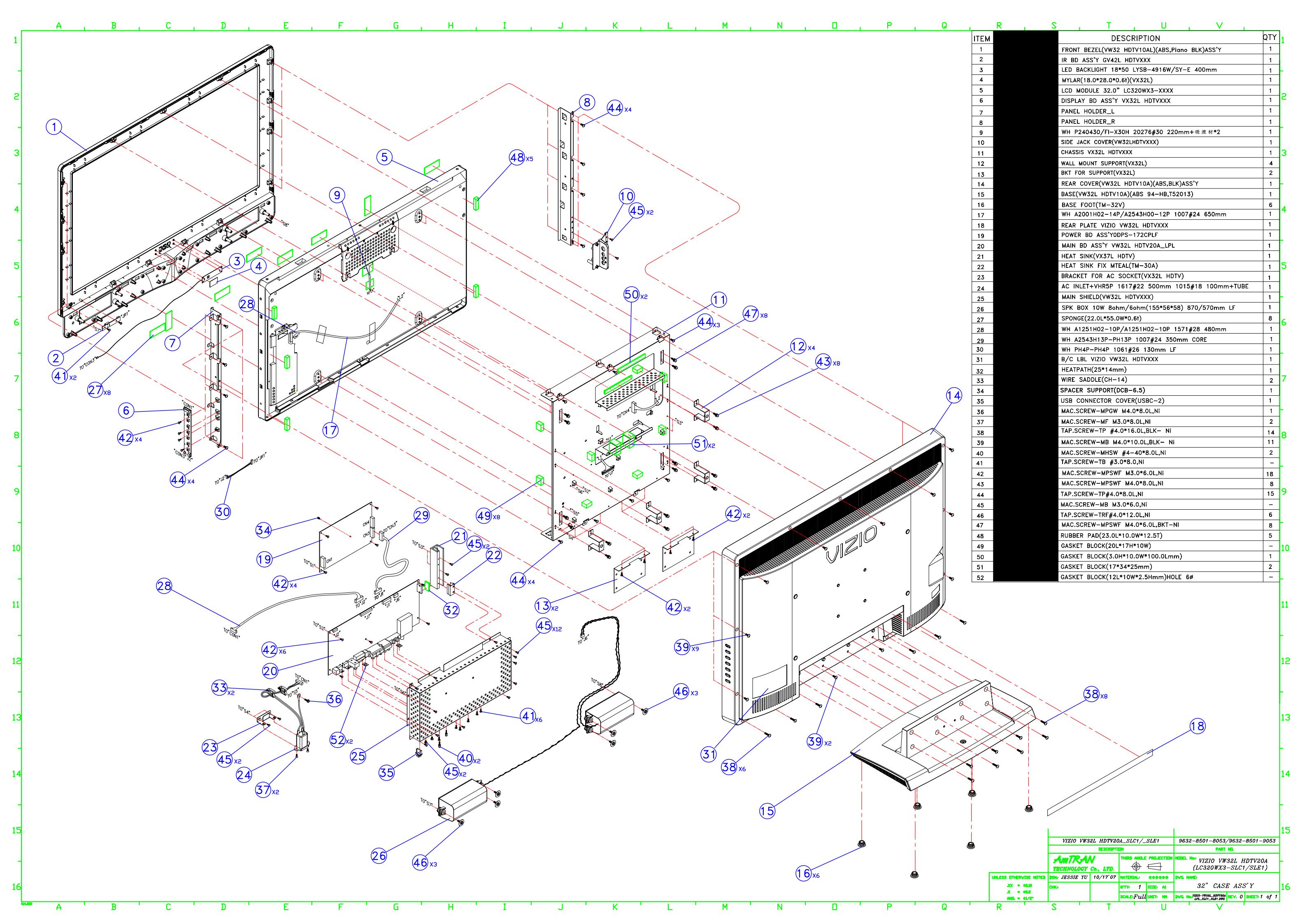
2. POWER BD ASS'Y REMOVAL

- 1) Remove the connector ⑧(CN4) of the inverter cable.
- 2) Remove the connector ⑨(CN3) of the power cable.
- 3) Remove the connector ⑩(CN1) of the power cable 1.
- 4) Remove four screws ⑪ from Power BD ASS'Y .
- 5) Separate the Power BD ASS'Y .

3. MAIN BD ASS'Y REMOVAL

- 2) Remove the connector ⑫(J6) of the speaker cable.
- 3) Remove the connector ⑬(J1) of the Power cable.
- 4) Remove the connector ⑭(J7) of the LVDS cable.
- 5) Remove the connector ⑮(J2) of the Display cable.
- 6) Remove two screws ⑯ from Heat sink.
- 7) Remove six screws ⑯ from MAIN BD .
- 8) Separate the MAIN BD .



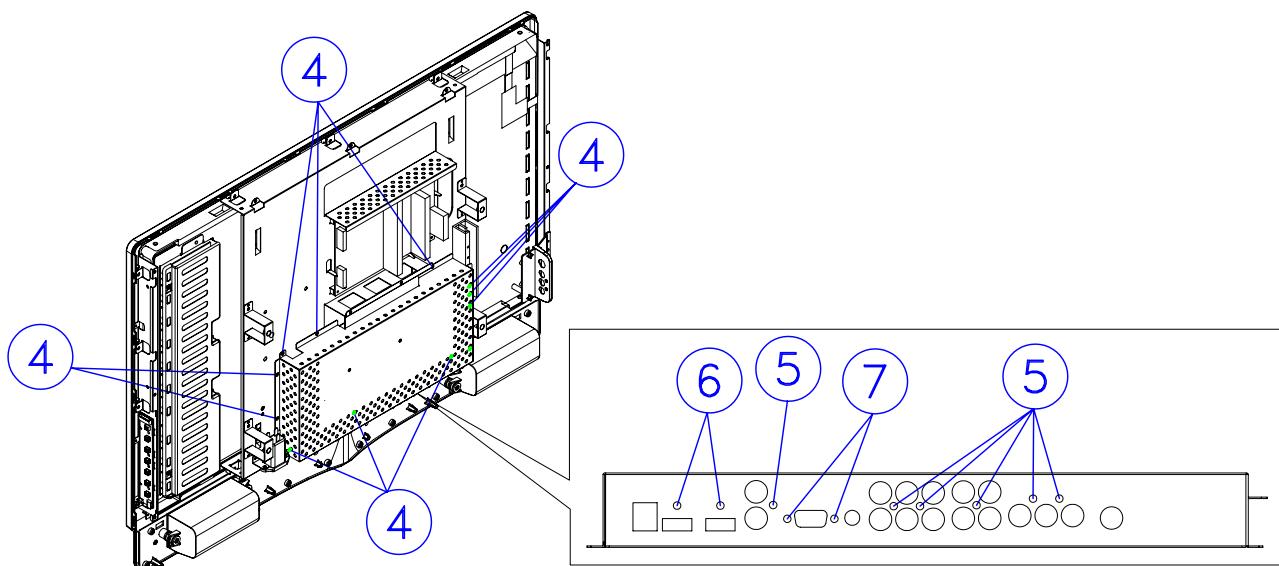
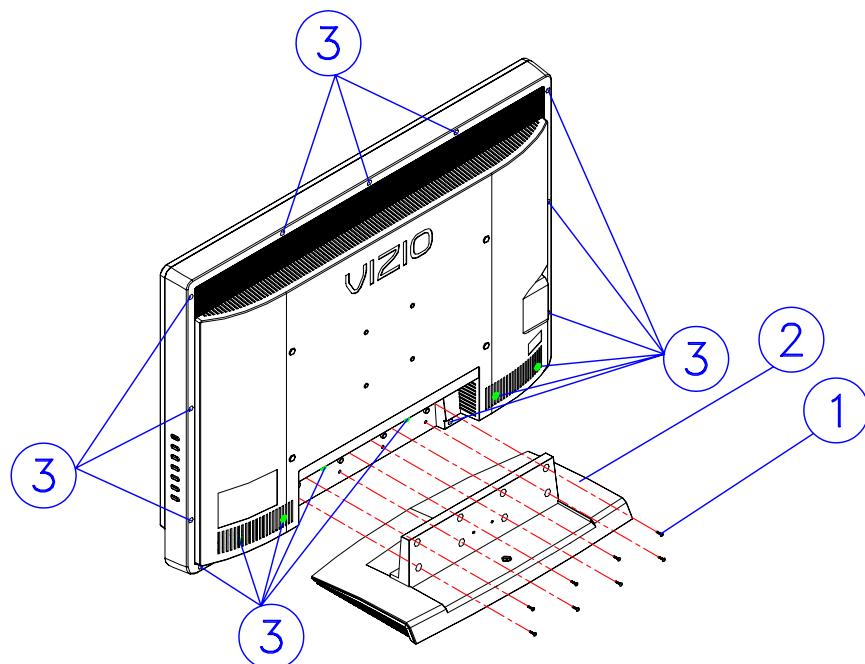


DISASSEMBLY INSTRUCTIONS

1. REAR COVER ASS'Y REMOVAL

Note: Spread a mat underneath to avoid damaging the TV surface.

- 1) Remove eight screws ① from Base Ass'y ② .
- 2) Separate the Base Ass'y ② .
- 3) Remove seventeen screws ③ from rear cover.
- 4) Separate the rear cover.
- 5) Remove twelve screws ④ from Main shielding.
- 6) Remove six screws ⑤, two screws ⑥, and two hexagon screws ⑦ from Main Shielding.
- 7) Separate the Main Shielding.

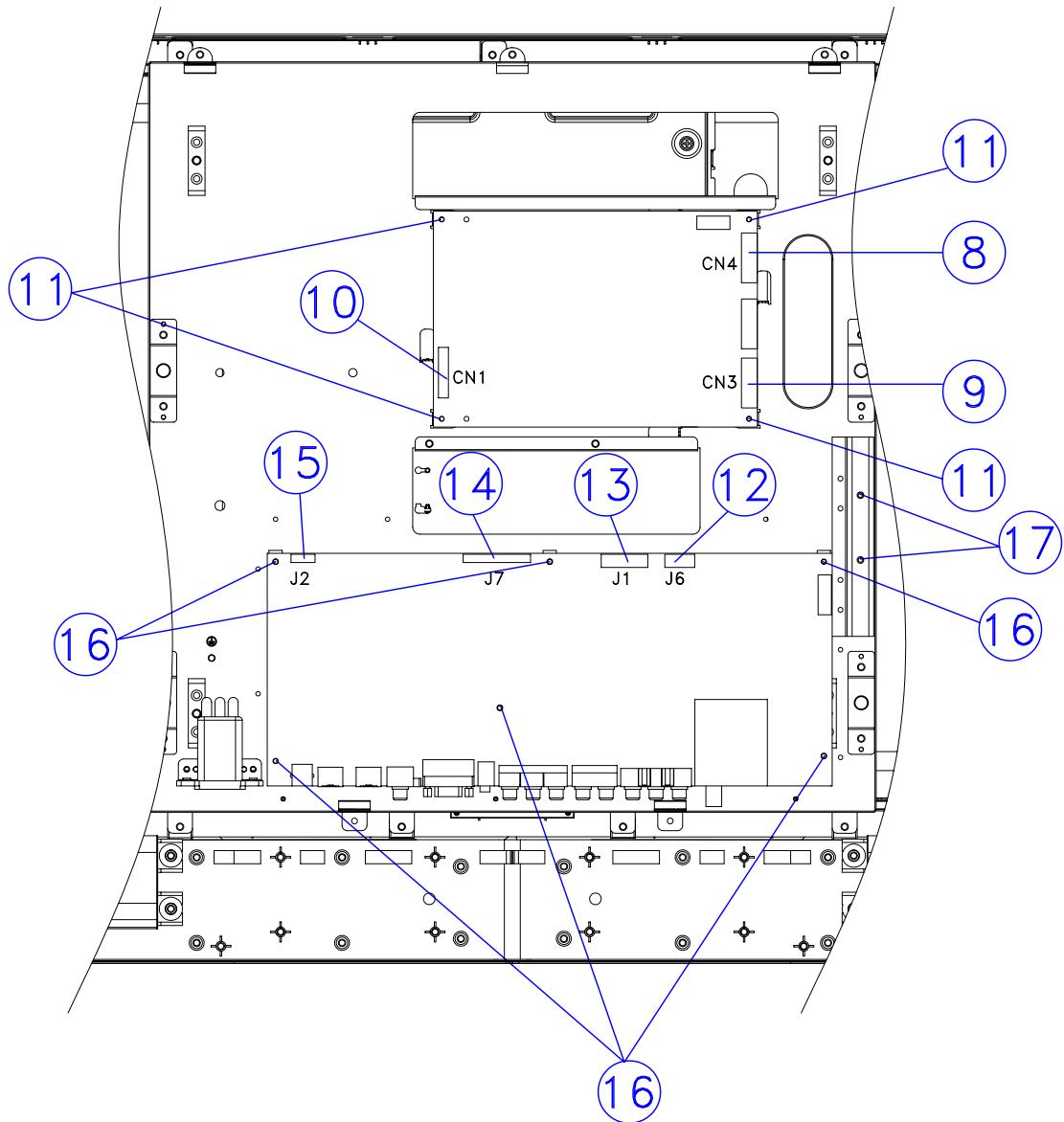


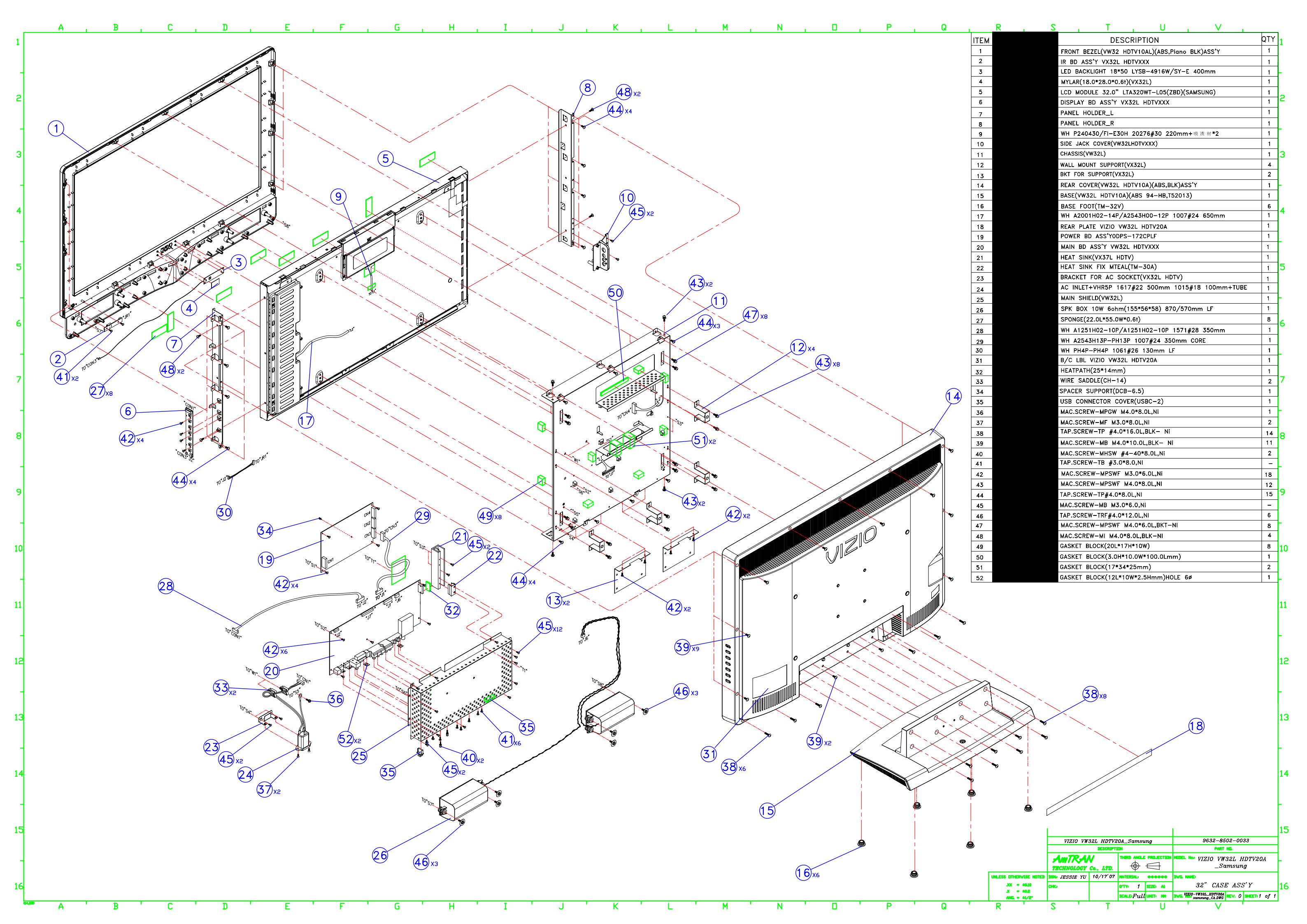
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- 2) Remove the connector ⑨ (CN3) of the power cable.
- 3) Remove the connector ⑩ (CN1) of the power cable 1.
- 4) Remove four screws ⑪ from Power BD ASS'Y .
- 5) Separate the Power BD ASS'Y .

3. MAIN BD ASS'Y REMOVAL

- 2) Remove the connector ⑫ (J6) of the speaker cable.
- 3) Remove the connector ⑬ (J1) of the Power cable.
- 4) Remove the connector ⑭ (J7) of the LVDS cable.
- 5) Remove the connector ⑮ (J2) of the Display cable.
- 6) Remove two screws ⑯ from Heat sink.
- 7) Remove six screws ⑯ from MAIN BD .
- 8) Separate the MAIN BD .



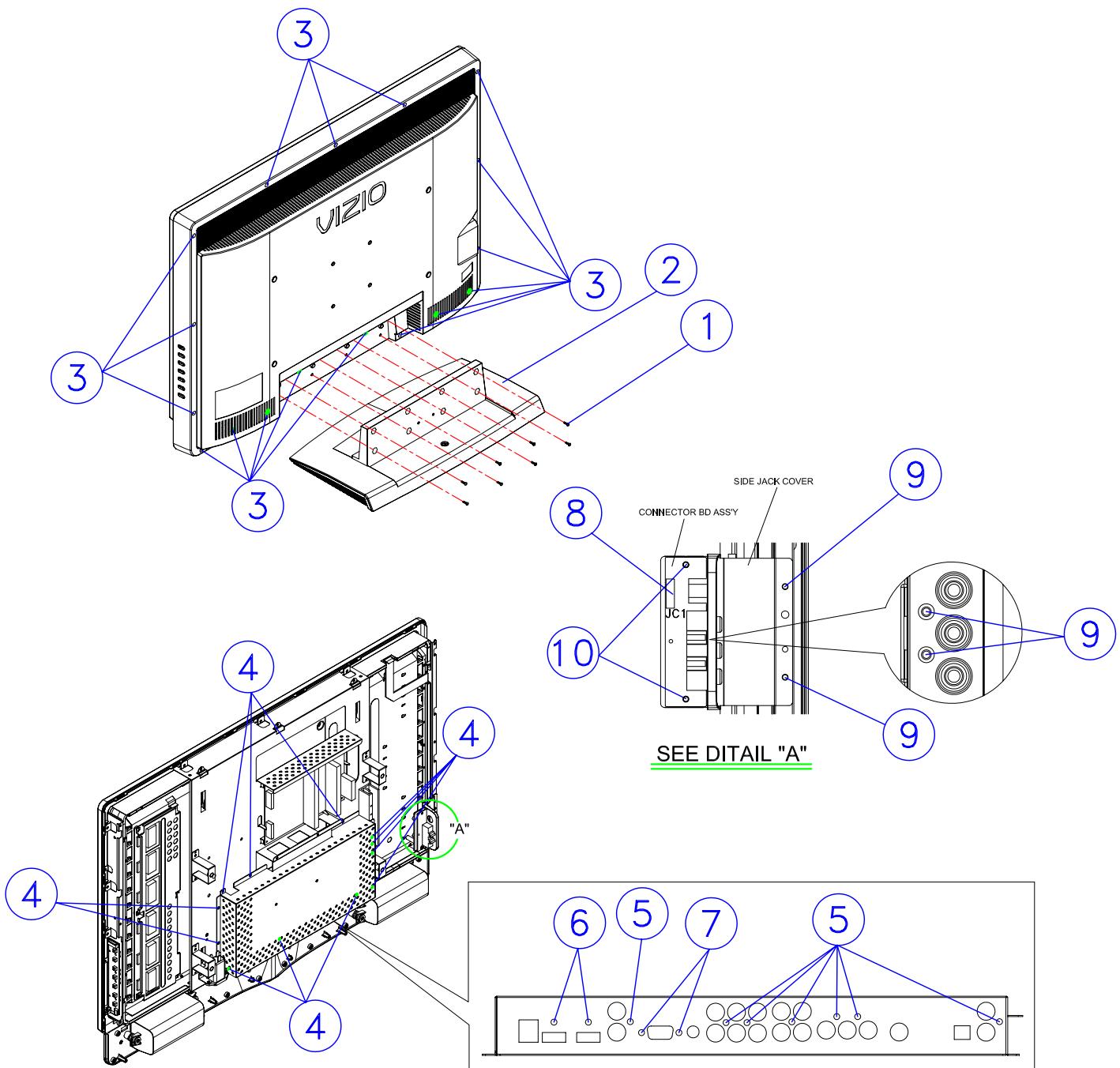


DISASSEMBLY INSTRUCTIONS

1. REAR COVER ASS'Y REMOVAL

Note: Spread a mat underneath to avoid damaging the TV surface.

- 1) Remove eight screws ① from Base Ass'y ② .
- 2) Separate the Base Ass'y ② .
- 3) Remove seventeen screws ③ from rear cover.
- 4) Separate the rear cover.
- 5) Remove twelve screws ④ from Main shielding.
- 6) Remove seven screws ⑤ , two screws ⑥ , and two hexagon screws ⑦ from Main Shielding.
- 7) Separate the Main Shielding.
- 8) See detail "A", Remove the connector ⑧ (JC1) of the connector cable.
- 9) Remove four screws ⑨ and two screws ⑩ .
- 10) Separate the Connector Bd Ass'y and sidejack cover.

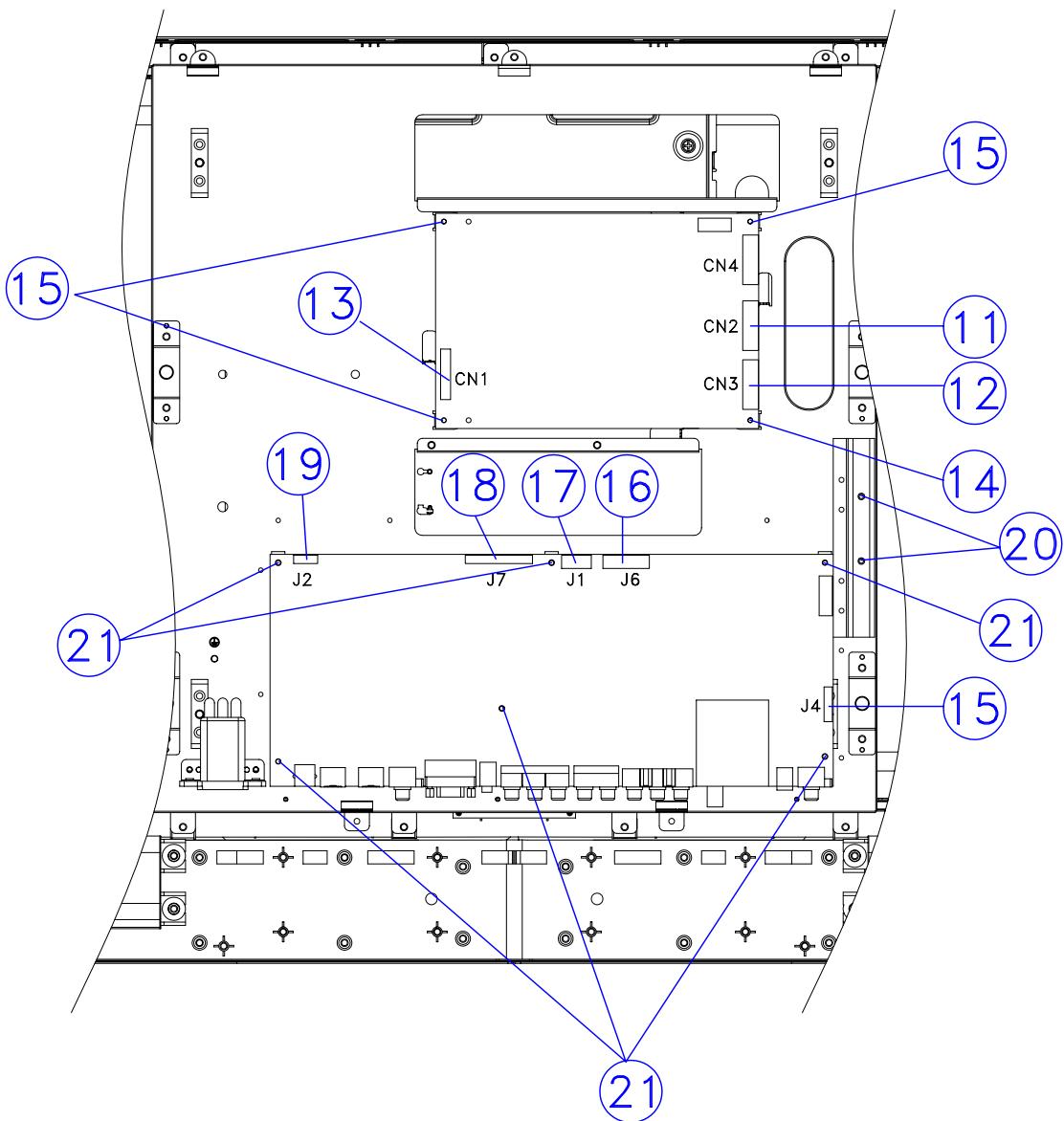


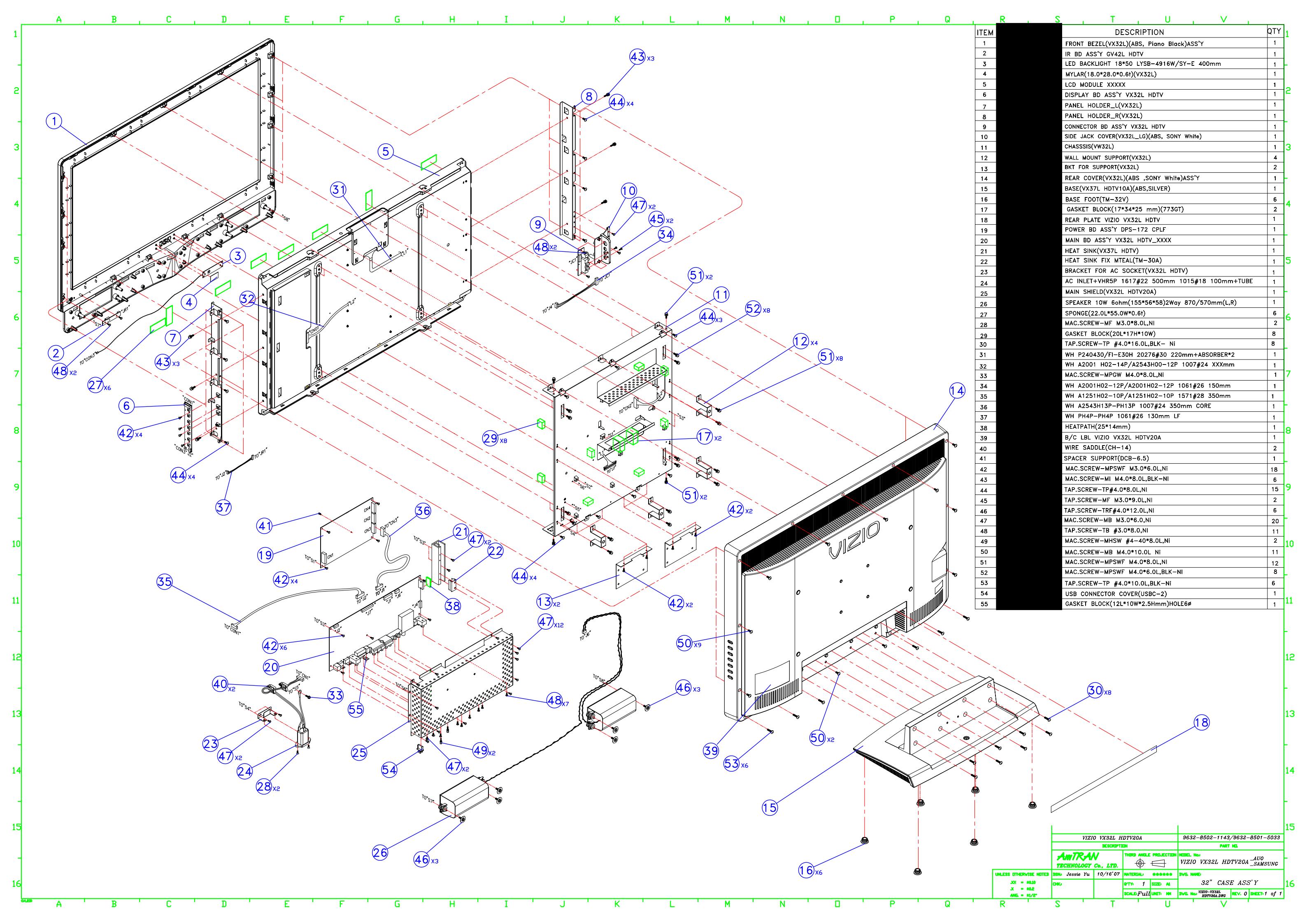
2. POWER BD ASS'Y REMOVAL

- 1) Remove the connector ⑪ (CN2) of the inverter cable.
- 2) Remove the connector ⑫ (CN3) of the power cable.
- 3) Remove the connector ⑬ (CN1) of the power cable 1.
- 4) Remove four screws ⑭ from Power BD ASS'Y .
- 5) Separate the Power BD ASS'Y .

3. MAIN BD ASS'Y REMOVAL

- 1) Remove the connector ⑮ (J4) of the Connector cable.
- 2) Remove the connector ⑯ (J6) of the speaker cable.
- 3) Remove the connector ⑰ (J1) of the Power cable.
- 4) Remove the connector ⑱ (J7) of the LVDS cable.
- 5) Remove the connector ⑲ (J2) of the Display cable.
- 6) Remove two screws ⑳ from Heat sink.
- 7) Remove six screws ㉑ from MAIN BD .
- 8) Separate the MAIN BD .



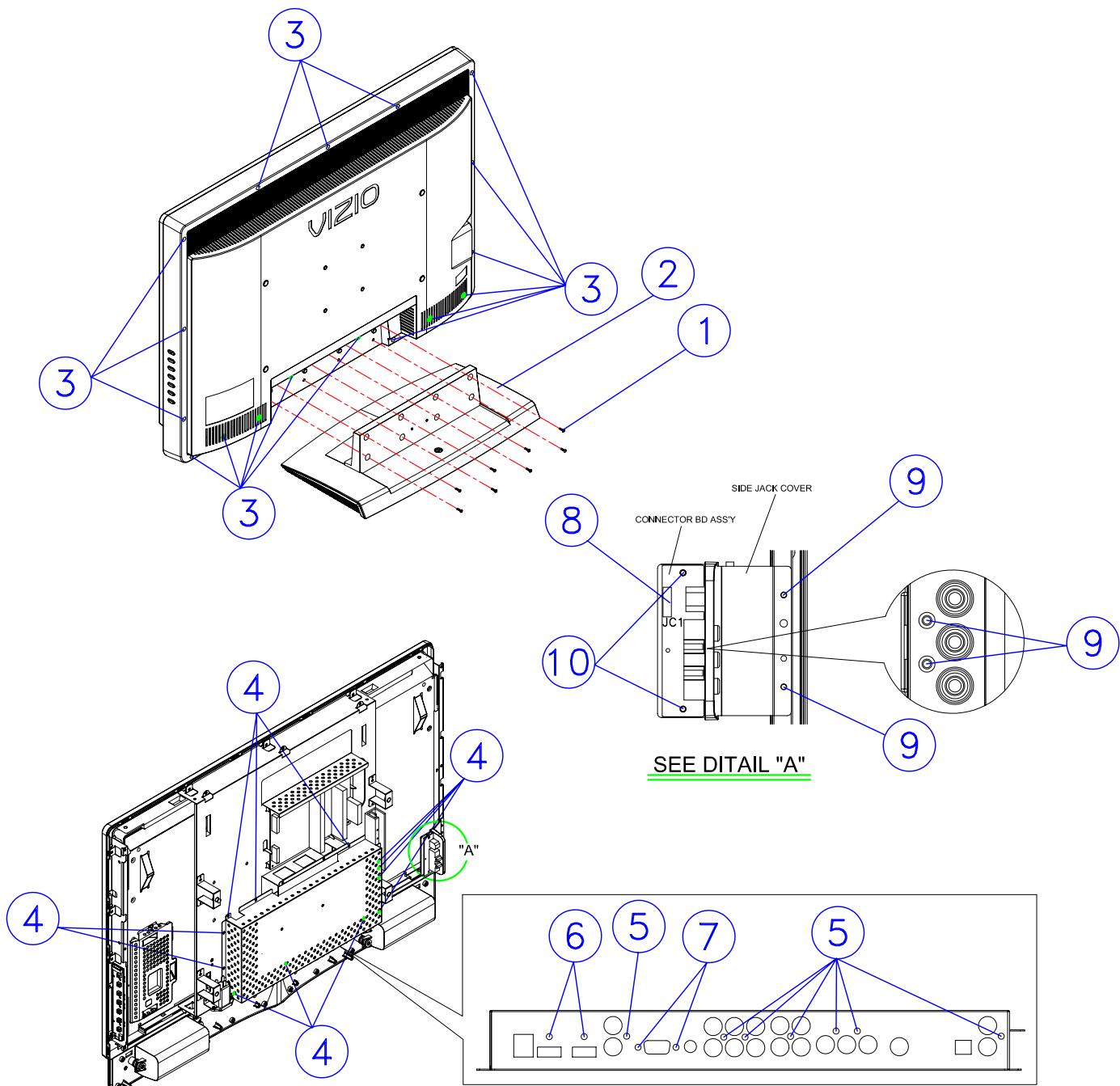


DISASSEMBLY INSTRUCTIONS

1. REAR COVER ASS'Y REMOVAL

Note: Spread a mat underneath to avoid damaging the TV surface.

- 1) Remove eight screws ① from Base Ass'y② .
- 2) Separate the Base Ass'y② .
- 3) Remove seventeen screws ③ from rear cover.
- 4) Separate the rear cover.
- 5) Remove twelve screws ④ from Main shielding.
- 6) Remove seven screws ⑤ , two screws ⑥ , and two hexagon screws ⑦ from Main Shielding.
- 7) Separate the Main Shielding.
- 8) See detail "A", Remove the connector ⑧ (JC1) of the connector cable.
- 9) Remove four screws ⑨ and two screws ⑩ .
- 10) Separate the Connector Bd Ass'y and sidejack cover.



2. POWER BD ASS'Y REMOVAL

- 1) Remove the connector ⑪ (CN2) of the inverter cable.
- 2) Remove the connector ⑫ (CN3) of the power cable.
- 3) Remove the connector ⑬ (CN1) of the power cable 1.
- 4) Remove four screws ⑭ from Power BD ASS'Y .
- 5) Separate the Power BD ASS'Y .

3. MAIN BD ASS'Y REMOVAL

- 1) Remove the connector ⑮ (J4) of the Connector cable.
- 2) Remove the connector ⑯ (J6) of the speaker cable.
- 3) Remove the connector ⑰ (J1) of the Power cable.
- 4) Remove the connector ⑱ (J7) of the LVDS cable.
- 5) Remove the connector ⑲ (J2) of the Display cable.
- 6) Remove two screws ⑳ from Heat sink.
- 7) Remove six screws ㉑ from MAIN BD .
- 8) Separate the MAIN BD .

